The Impact of Service Quality, Perceived Value, Customer Satisfaction in Calculative Commitment and Customer Loyalty Chain in Indian Mobile Telephone Sector

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Abstract: *All people are becoming busy and more professional than previous. The business world and general life is becoming more complex day by day. They need to share more information to each other because of globalization. Mobile phone has introduced a tremendous change in the Communication sector in all over the world. It has changed the communication structure also. People in various occupations and income levels are using mobile phone intensively for their occupational purpose and personal purpose as well. Mobile phone services contribute significantly to the growth and development of the country whether industrial or emerging economy where they operate. Customer loyalty is important for both the firm and the customer. As regards the firm, loyal customers are willing to make repeat purchases in the business that delivers value beyond their expectation. Loyal customers often will, over time bring substantial revenues and demand less attention from the firms they patronize. The determinants of customer loyalty such as service quality, perceived service value, customer satisfaction, customer trust and commitment. Several researchers suggest using a theoretical approach to develop a much deeper insight into key marketing constructs such as service quality, customer perceived value, customer satisfaction, perceived switching costs, corporate image, and customer loyalty is of vital to the mobile communications market. This paper aims to investigate the role of customer satisfaction in the mobile telephone network service providers (MTNSPs). To notify the meaningful factors for the calculative commitment and loyalty intention of the users in using mobile phones, this study focuses on the effect of service quality and perceived value in customer satisfaction and to identify the role of calculative commitment in forming customer loyalty. As many as 125 users of mobile phone users- working people were surveyed in Coimbatore city, TamilNadu, India. The data as analyzed by confirmatory factor analysis, AMOS and path analysis. This study shows that customer satisfaction, perceived value, service quality and calculative commitment has a positive and significant effect, calculative commitment has a positive effect on loyalty intention and loyalty intention has a positive effect on behavior loyalty and attitudinal loyalty. In terms of mobile telecommunication systems, it is found that the users may exhibit noticeable differences in using this service. This study provides important hints to strengthen the relationship between the network service providers and their customers.*
Key words: *Attitudinal loyalty, Behavioral loyalty, Calculative Commitment, Customer Loyalty, customer satisfaction, perceived value, Service quality.*

I. Introduction

Indian telecom industry underwent a high pace of market liberalization and growth since the 1990s and now has become the world's most competitive and one of the fastest growing telecom markets. The Industry has grown over twenty times in just ten years, from under 37 million subscribers in the year 2001 to over 846 million subscribers in the year 2011. India's telecommunication network is the second largest in the world by number of telephone users (both fixed and mobile phone) with 1.206 billion subscribers as on 30 September 2017. It has one of the lowest call tariffs in the world enabled by mega telecom operators and hyper-competition among them. India has the world's second-largest Internet user-base. As on 30 September 2017, there were 324.89 million internet subscribers in the country. Telecommunication has supported the socioeconomic development of India and has played a significant role to narrow down the rural-urban digital divide to some extent. It also has helped to increase the transparency of governance with the introduction of e-governance in India.

Significance

Advances in technology have changed the way in which the world conducts business and are increasingly providing consumers with greater conveniences. The Internet and telecommunication technologies are frequently regarded as two major drivers for creating new value and introducing new services to customers. A driving force behind mobile commerce is the mobile service providers of wireless telecommunication technology that offer consumers the means to remotely engage in commerce via their mobile devices. As the mobile commerce market grows, two critical issues facing mobile service providers are market share and competitive advantage. The opportunities associated with market expansion will certainly result in a greater number of providers. Thus, gaining or maintaining market share through a means that provides an unparalleled competitive advantage will strongly figure into a provider's business plan. Although technology can provide a competitive advantage, the advantage is only temporary. As the technology matures it becomes readily available to everyone and the advantages it once provided disappear. A better approach lies in adopting technology to leverage a customer-centric approach that focuses the business on retaining existing customer and seeking their loyalty. Continual advances in mobile technology, the rapid evolution of the mobile services market and its quick rise to maturity, and market dynamics may offer many challenges to CRM (Customer Relationship Management).

II. Theoritical Background

The conceptualization and operationalization of the main concepts in this study is based on relevant literature, presented below. Additionally, hypotheses regarding the relationships among the concepts are developed.

Service Quality

More recently, based on Brady and Cronin's [13] model, Lu et al. [65] developed a multidimensional and hierarchical model to measure mobile service quality. They proposed that mobile service quality was composed of three primary dimensions, interaction quality, environment quality and outcome quality, and each primary dimension further included sub-dimensions. According to Zeithaml (1988) service quality could be conceptualized as the consumers' judgment about the overall excellence or superiority of a service. High service quality could attract new customers, retain existing customers and also lure customers away from other service competitors whose service quality is perceived as poorer (Babakus et al., 2004). Service quality is especially important in the context of mobile services, since previous researches have pointed out as the key factors of mobile companies' success the service quality and customer satisfaction (Yang and Peterson, 2004). Service quality is a critical factor for companies' profitability and market success (Aydin and Özer, 2005). Shin and Kim (2008), service quality is defined as the consumers' overall impression of the relative efficiency of a service provider. One consensus that has emerged from several recent studies is that researchers empirically modelling the service quality construct have consistently identified at least three primary dimensions of service quality: interaction quality, physical environment quality, and outcome quality (Brady and Cronin, 2001; Clemes et al., 2011; Clemes et al., 2010; Clemes et al., 2007; Dagger et al., 2007; Lu et al., 2009; Martı´nez Caro and Martı´nez Garcı´a, 2008). These three primary dimensions are used in this current study.

The service marketing literature suggests that the interpersonal interactions between mobile communications service providers and their customers significantly impact on mobile communications service quality as perceived by customers (Kim et al., 2004; Lai et al., 2007; Lim et al., 2006; Lu et al., 2009; Wang et al., 2004). Dabholkar et al. (1996) suggest that in a retail store the physical aspects are similar to the tangible dimension of SERVQUAL, but that the physical aspects have a broader meaning. Lai et al.'s (2007) and Wang et al.'s (2004) findings show that the store environment, such as whether the physical facilities provided by mobile communications service providers are visually appealing, and whether employees of mobile communications service providers are well dressed and neat in appearance, have a significant impact on customers' overall perceptions of mobile communications service quality in the mobile communications market.

Outcome quality, or technical quality, is what customers receive after the service delivery process and buyer-seller interactions are complete (Gronroos, 1984). Rust and Oliver (1994, p. 2) define customer satisfaction as "a summary cognitive and affective reaction to a service incident" that results from the comparison of customers' perceptions of service quality with their expectations of service performance.

Perceived Value

According to Zeithaml (1988) perceived value could be defined as the consumers' overall assessment of the benefits of a product or service, based in perceptions of what is received and what is given. Other authors conceptualize service perceived value as a trade-off between total benefits and total sacrifices, whether these sacrifices are monetary or non-monetary (Al-Debei, Al-Lozi, & Papazafeiropoulo, 2013). In the mobile communications sector, the service perceived value could be defined as the evaluation of the benefits of a

service by customers, based on their advance sacrifices and ex-post perceived performance when they use mobile services (Kuo, Wu, & Deng, 2009). This way, customers integrate their perceptions of what they get and what they give up to obtain mobile communication services. Although service quality is an important element of service value, previous research suggests that price and value for money are other key components, meaning what consumers pay to acquire a specific service (Lu, Lu, & Jen, 2011). So, according to the consumers' monetary perspective, service value is created when less money is paid for services (Kuo et al., 2009).

According to Edward, George and Sarkar (2010) consumers make purchase decisions based on the benefits and costs involved, and the concept of service value generally held the notion of the quality and benefits consumers get for a unit of money -the price -, involving the trade-off between what consumers receive and what they give.

Customer Satisfaction

Customer satisfaction is an important factor for maintaining a long-term relationship between a company and its customers (Anderson and Srinivasan, 2003; Lim et al., 2006). Satisfaction may be assessed by customer's rating of the brand, which is based on all the encounters and experiences of the customer with the brand. Kim et al. (2004). Satisfaction was defined as a consumer's post-purchase evaluation and affective response to the overall product or service experience (Oliver, 1992). Satisfaction is also a strong predictor for behavioral variables like intensions of repurchase, recommendations, loyalty (Lin and Wang, 2006). Satisfaction is significantly influenced by customer's evaluation of service features. Javalgi et al. (2005).

The rapid growth of the mobile services market in the past years has resulted in a sector facing a fierce competition among companies, with mobile operators offering a wide range of services and offers to attract new customers and to retain the present customers (Shukla, 2010). In this increasingly competitive scenario, the ability to provide a high level of customer satisfaction, along with a low defection intentions are key issues in order to differentiate from competitors (Deng et al., 2010). Investigating crucial factors that leads to customer loyalty in the mobile telephony sector are service quality and customer satisfaction. Ilias Santouridis and Panagiotis Trivellas (2010).

Overall Consumer Satisfaction (CS) has three antecedents: Perceived Quality (PQ), Perceived Value (PV), and Customer Expectations (CE); and two consequences: Customer Complaints (CC) and Customer Loyalty (CL). PQ is the consumer's evaluation of the consumption experience and PV evaluates perceived quality relative to price. Each individual item of satisfaction is positively correlated with overall satisfaction, and the most correlated items are, in this order, customer care, communications quality and complementary services, followed by adequacy of rates, price, easily-acquired new handsets, bill clarity and coverage, while the least important is the ability to easily find rates and offers. Covadonga Gijón a,b , Teresa Garín-Muñoz c , Teodosio Pérez-Amaral a,n , Rafael López-Zorzano, the basic ACSI model (Fornell, Johnson, Anderson, Cha, & Bryant, 1996)

Calculative Commitment

Commitment is recognized as an essential ingredient for successful long-term relationships (Dwyer, Schurr, and Oh 1987; Morgan and Hunt 1994). Commitment has been defined as "an enduring desire to maintain a valued relationship" (Moorman, Zaltman, and Deshpande 1992, p. 316). Gundlach, Achrol, and Mentzer (1995) argue that commitment has three components: an instrumental component of some form of investment, an attitudinal component that may be described as affective commitment or psycho- logical attachment, and a temporal dimension indicating that the relationship exists over time.

Lin and Wu (2011) consider customer commitment as a consumer's persistent wish and attempt to retain a relationship with a service provider. In terms of their relationship with service quality, positive overall service quality impacts on commitment that customers have towards a particular brand and the associated service provider (Jahanzeb et al., 2011).

Customer Loyalty

Loyal customers are less likely to change provider because of price, while they also tend to recommend the business to others (Reichheld and Sasser, 1990; Reichheld and Teal, 1996). Such observations highlight the critical importance of customer loyalty for companies and especially for those operating in service industries.

Attitudinal And Behavioural Loyalty

Attitudinal loyalty is evaluated by customers' inner thoughts of attachment, positive word-of-mouth and recommendations (Zeithaml et al., 1996). Attitudinal loyalty can be determined by exploring if customers consider themselves to be loyal patrons of this ISP, as well as if they think this ISP is the best choice for them (Kim and Niehm, 2009). In addition to attitudinal loyalty, behavioral loyalty is measured by the number of customers which remain with their service provider (Zeithaml et al., 1996).

Customer loyalty is often examined from a behavioral point of view by measuring items such as number of repeat purchases, "share of wallet" and purchase frequency. A frequent assumption is that loyalty translates into an unspecified number of repeat purchases from the same supplier over a specified period (Egan, 2004). In this line, Oliver (1999) defined loyalty as "a deeply held commitment to re buy or re patronize a preferred product/service consistently in the future, thereby causing repetitive same-brand purchasing, despite situational influences and marketing efforts having the potential to cause switching behavior". Dick and Basu (1994) suggested that loyalty has both attitudinal and behavioral elements and argued that it is determined by the strength of the relationship between relative attitude and repeat patronage. Examining loyalty under the attitudinal lens, it can be derived from psychological involvement, favoritism and a sense of goodwill towards a particular product or service (Oh, 1995 cited by Kim et al., 2004).

Overall, despite the fact that there are plenty of different approaches aiming at the definition and conceptualization of loyalty, there is a general convergence towards the view that both behavioral and attitudinal features must be included. The behavioral view is usually based on the monitoring of the frequency of repeated purchases and brand switches, while the attitudinal approach assumes that loyalty is derived from psychological involvement and preference and focuses on issues such as brand recommendations, resistance to superior products, repurchase intention and willingness to pay a price premium (Cronin and Taylor, 1992). Because of the importance of customer loyalty discussed above the following objectives are framed.

Concept Framework And Hypothesis
Service Quality
S K Chadha* and Deepa Kapoor, , focussed their study to test the effect of switching cost, service quality and customer satisfaction on customer loyalty in cellular services. The results of the study found a positive relationship between the switching cost and customer perceived service quality, customer satisfaction and customer loyalty. We also believe that service quality is an important determinant of customer loyalty.
Studies have produced consistent evidence that customer satisfaction is an important determinant of customer loyalty in the service industry (Mittal and Lassar, 1998; Boshoff and Gray, 2004; Lam et al., 2004; Eshghi et al., 2007).
Greece Ilias Santouridis and Panagiotis Trivellas (2010) analysed Investigating the impact of service quality and customer satisfaction on customer loyalty in mobile telephony in Greece. The analysis of the research data showed that service quality is a major predictor of both customer satisfaction and loyalty. Satisfaction has a very significant positive effect on loyalty by totally mediating the influence of the pricing structure and billing system service quality dimensions. Wong and Sohal (2003) examine the effect of service quality and customer loyalty on two levels of retail relationships: person-to-person (salesperson level) and personto-firm (store level) and found a positive relationship between service quality and customer loyalty. A significant relationship was found to exist between service quality and customer loyalty in the commercial airline industry (Ostrowski et al., 1993; Zins, 2001). Based on this literature the following hypothesis is proposed.
H1: Service quality has a significant effect on customer satisfaction.
H2: Service quality has a significant effect on calculative commitment.

Perceived Value
Previous research highlights some variables as the main drivers of services' perceived value, such as the service quality, a good value for money and the customer service (Gerpott et al., 2001)and also suggests that price and value for money are other key components, meaning what consumers pay to acquire a specific service (Lu, Lu, & Jen, 2011). Performance value is the utility derived from the perceived quality and expected performance of the product / service.
In the Thai mobile service context, value has a positive influence to customer retention (Leelakulthanit and Hongcharu, 2011). In the Chinese mobile data services, customer value also has direct effects on repurchase intention (Qian et al., 2011; Wang et al., 2004) and attitudinal loyalty (Qian et al., 2011). Likewise, Lien et al. (2011) found a significant link between perceived value and behavioral intentions in Taiwanese online shopping context. Similar findings also reported in the Taiwanese mobile commerce context (Chiou, 2004).
Fujun Lai, Mitch Griffin b, Barry J. Babin c, (2009) analyzed how quality, value, image, and satisfaction create loyalty at a Chinese telecom. Integrative model is used to examine the relations among service quality, value, image, satisfaction, and loyalty in China. Results reveals that service quality directly influences both perceived value and image perceptions, that value and image influence satisfaction, that corporate image influences value, and that both customer satisfaction and value are significant determinants of loyalty. Thus, value has both a direct and indirect (through satisfaction) impact on customer loyalty. Other variables mediate the impact of both service quality and corporate image on customer loyalty. Dong-Hee Shin n (2014) in his study on the Effect of the customer experience on satisfaction with smartphones: (Assessing smart satisfaction index with partial least squares). Found that the perceived value and customer satisfaction are key

variables mediating the relationship between quality and customer loyalty. Based on this literature the following hypothesis is proposed.

H3: perceived value has a significant effect on customer satisfaction.
H4: Perceived value has a significant and positive effect on calculative commitment.
H5: Perceived value has a significant and positive effect on loyalty Intention.
H6: Perceived value has a significant and positive effect on attitudinal loyalty.

Customer Satisfaction

Customer satisfaction was considered as an important goal for telecommunication network operators in the liberalized German market. in their study considered assessment of price, perceived network quality, assessment of customer care and personal benefits as perceived by customers as drivers of customer satisfaction. Gerpott et al. (2001)

Exploring determinants of customer satisfaction of mobile network providers in France, they considered pricing plan, core services which included coverage of the calling area and clarity of sound, value added services consisting of precision of billing service and easy access to mobile network provider. The parameter estimates of the independent variables were positive and significant. Lee et al. (2001).

The Korean mobile telecommunication industry is in the maturity stage and the players in the industry have shifted their strategic focus away from attracting new customers, toward retaining existing customers. In this context Kim et al. (2004), considered in their study call quality, pricing structure, value added services, convenience in procedures, customer support as drivers of customer satisfaction.

H7: Customer satisfaction has a significant and positive effect on calculative commitment.

Calculative Commitment

Moreover, numerous studies have recently demonstrated that there is a positive correlation between customer commitment and customer repurchase.

Affective and calculative commitment positively affects the customers' intention to continue a relationship with their service provider in a Central and Eastern European in the service sector, Cater and Zabkar (2009). A positive connection between affective commitment and customer loyalty in financial services industry, Verhoef (2003).

Calculative commitment and affective commitment positively influence behavioral intentions (Cater and Zabkar, 2009; Fullerton, 2005). More time and effort customers have invested in the relationship with their service provider, the less inclined the customers are to break up that relationship (Bügel et al., 2010). Customers with high levels of calculative commitment will be unwilling to switch to another service provider because of the great switching costs (Bügel et al., 2010; Cater and Zabkar, 2009).

Studies on customer behavior have undergone tremendous developments in the past few decades. For instance, during the 1970s and 1980s, scholars have emphasized the role of customer satisfaction in determining consumer behavior (Oliver, 1999). However, more recently, researchers have expanded this conceptualization beyond satisfaction into the realms of customer commitment (Garbarino and Johnson, 1999) and customer loyalty (Berry, 1995). This new interest is underscored by the long held view that mere acquisition of new customers and getting them satisfied cannot guarantee sustained business and that a loyal customer base is the only assurance firms have against possible losses (Berry, 1995). Based on the above discussed literature the following hypothesis is framed.

H8: Calculative commitment has a significant and positive relationship on loyalty intention.
H9: Calculative commitment has a significant and positive relationship on Attitudinal Loyalty.

Loyalty Intention

This study adopts the composite loyalty approach which suggests a simultaneous assessment of attitudinal and behavioural loyalty (Dick and Basu, 1994).

Examined the effect of switching cost, service quality and customer satisfaction on customer loyalty in the mobile telecommunication services, shows that the switching cost, service quality and customer satisfaction have positive association with customer loyalty. However, the customer satisfaction was found to be the best predictor of customer loyalty. S K Chadha and Deepa Kapoor (2009).

Customer loyalty refers to a favorable attitude towards a particular brand in addition to purchasing it repeatedly (Day, 1969); a relationship between relative attitude towards an entity and repeat patronage behavior (Dick and Basu, 1994); a situation when repeat purchase behavior is accompanied by a psychological bond; and repeat purchase intentions and behaviors. Customer loyalty sometimes has been operationalized as a behavioral measure and at other times as an attitude. The concept of customer loyalty is understood as a combination of customers' favorable attitude and the behavior or repurchases, Kim et al. (2004).

Customer loyalty is affected by customer satisfaction and the switching barrier (Dick and Basu, 1994; Gerpott et al., 2001; and Lee and Cunningham, 2001). Customers experiencing high level satisfaction are likely to remain with their existing providers and maintain their subscription.

Loyalty has both attitudinal and behavioral elements and argued that it is determined by the strength of the relationship between relative attitude and repeat patronage. Dick and Basu (1994).

H10: Loyalty Intention has a significant and positive relationship on Attitudinal Loyalty.
H11: Loyalty Intention has a significant and positive relationship on Behavior Loyalty.

Behavior And Attitudinal Loyalty

Customer loyalty sometimes has been operationalized as a behavioral measure and at other times as an attitude. Behavioral measures include probability of purchase (Farley, 1964), purchase frequency (Brody and Cunningham, 1968), repeat purchase behavior (Brown, 1952), purchase sequence and multiple aspects of purchase behavior.

Attitudinal approaches are focused mainly on brand recommendations (Boulding et al., 1993), resistance to superior products (Narayandas, 1996), willingness to pay a price premium (Zeithaml et al., 1996) and repurchase intention (Cronin and Taylor, 1992; and Anderson and Sullivan, 1993).

Examining loyalty under the attitudinal lens, it can be derived from psychological involvement, favoritism and a sense of goodwill towards a particular product or service (Oh, 1995 cited by Kim et al., 2004).

The behavioral view is usually based on the monitoring of the frequency of repeated purchases and brand switches, while the attitudinal approach assumes that loyalty is derived from psychological involvement and preference and focuses on issues such as brand recommendations, resistance to superior products, repurchase intention and willingness to pay a price premium (Cronin and Taylor, 1992).

Attitudinal loyalty is evaluated by customers' inner thoughts of attachment, positive word-of-mouth and recommendations (Zeithaml et al., 1996). Attitudinal loyalty can be determined by exploring if customers consider themselves to be loyal patrons of this ISP, as well as if they think this ISP is the best choice for them (Kim and Niehm, 2009). In addition to attitudinal loyalty, behavioural loyalty is measured by the number of customers which remain with their service provider (Zeithaml et al., 1996).

Attitudinal loyalty as its name suggests deals with the attitudes of customers, and more specifically with cognitive, affective, and conative aspects in a way that consumers reach ultimate loyalty despite situational influences or other things encouraging consumers to switch brands; however, behavioural loyalty centres on actual purchase behavior and is repeating the purchase behavior.

Attitudinal loyalty arises from emotional ties with a brand and backs up behavioral loyalty. Thus, one measurement for behavioral loyalty is buying frequency (Leenheer et al., 2007; Nam et al., 2011; Romaniuk and Nenycz-Thiel, 2011; Puligadda et al., 2012).

Customer loyalty manifests itself in a variety of behaviors, the common ones being recommending customers (attitudinal loyalty) to the service provider and repeatedly patronizing (behavioral loyalty) the service provider (Dwyer et al., 1987; Fornell, 1992).

The behavioral approach argues that the repeat purchasing of a brand over time by a consumer completely accounts for loyalty (Chaudhuri and Holbrook, 2001). Behavioral concepts strictly look at the repeat purchase behavior expressed in terms of revealed behavior such as proportion of purchase, purchasing frequency and probability purchase (Yanamandram and White, 2006). Attitudinal loyalty includes a degree of dispositional commitment associated with the repeat purchase behavior (Chaudhuri and Holbrook, 2001). The attitudinal perspective assumes that consistent buying of a brand is a necessary but not sufficient condition to "true" brand loyalty and it must be complemented with a positive attitude towards this brand to ensure that this behavior will be pursued further (Amine, 1998). The loyalty literature supports the two-dimensional measures as better predictors of customer's loyalty (Chaudhuri and Holbrook, 2001; Ganesh et al., 2000; Rauyren and Miller, 2007).

Several scholars have treated these two behaviors as customer loyalty indicators (Sirdeshmukh et al., 2002; Lam et al., 2004; Zeithaml et al., 1996). In the same vein, this study conceptualizes customer loyalty using these two manifestations. Customer loyalty is important for both the firm and the customer. As regards the firm, loyal customers are willing to make repeat purchases in the business that delivers value beyond their expectation. Loyal customers often will, over time bring substantial revenues and demand less attention from the firms they patronize (Yang and Peterson, 2004). Indeed, it is common to find loyal customers sympathizing with poor service, displaying less sensitivity to price and disseminating positive word of mouth about the service to others (Yang and Peterson, 2004). On the other hand, loyalty is important to customers because loyal customers incur less time and costs in searching for information and evaluating purchase decisions, and also incur less or no switching costs. Consequently, customer loyalty is beneficial to both the customer and the service provider and so is a major source of sustained competitive edge (Keaveney, 1995). Based on the above discussed literature the following hypothesis is framed.

H12: Attitudinal Loyalty has a significant and positive relationship on Behavior loyalty.

III. Research Methdology

Measurement Of Variables

For the validation of research hypothesis, seven measures were derived from the review of literature are service quality, perceived value, customer satisfaction, calculative commitment, loyalty intention, behavior and attitudinal loyalty. To measure the Service quality the questions were adapted from the research conducted by (Brady and Cronin, 2001;Clemes et al.,2007, 2010 & 2011;Dagger et al.,2009;Martinrz Caro and Martinez Garcia,2008) To measure the perceived value the variables and questions were adopted from (Chiao-Chen Chang 2015) and to measure the customer satisfaction the questions were adopted from (X-peng et al 2014, J.kim et al.2011) The dimensions of commitment that is calculative, is operationalised using the scales developed by Bansal et al. (2004) and Gustafsson et al. (2005). In order to measure loyalty the measurement items of behavioral and attitudinal loyalty are derived from Chaudhuri and Holbrook (2001), Evanschitzky et al. (2006), Gremler and Brown (1996), and Zeithmal et al. (1996). All the items are measured on a five-point Likert scale ranging from "very strongly disagree" to "very strongly agree".

Table 1: Constructs Definition

S.NO	CONSTRUCTS	DEFINITIONS
1	**Service Quality(SQ)**	consumers' judgment about the overall excellence or superiority of a service - Zeithaml (1988).
2	**Customer Satisfaction(CS)**	Consumer's post-purchase evaluation and affective response to the overall product or service experience (Oliver, 1992).)
3	**Perceived Value(PV**	Customer's overall assessment of the utility of a product based on perceptions of what is received and what is given refers to the consumer's overall assessment of the utility of a product based on perceptions of what is received and what is given. Zeithaml (1988).
4	**Calculative Commitment(CC)**	The extent of the need to maintain a relationship due to perceived switching costs. (Fullerton 2003).
5	**Loyalty Intention(LI)**	loyalty as "a deeply held commitment to re buy or re patronize a preferred product/service consistently in the future, thereby causing repetitive same-brand purchasing, despite situational influences and marketing efforts having the potential to cause switching behavior" Oliver (1999).
6	**Behavior Loyalty(BL)**	The repeat purchasing of a brand over time by a consumer completely accounts for loyalty.(Chaudhari and Holbroook 2001).
7	**Attitudinal Loyalty(AL)**	A degree of dispositional commitment associated with the repeat purchase behavior. (Chaudhuri and Holbrook, 2001)

Table 2: Measurement of variables

S.No	Variables	Number of items	Cronbach Alpha
1	Service quality	6	.774
2	Perceived value	3	.634
3	Customer satisfaction	6	.705
4	Calculative Commitment	7	.871
5	Customer Loyalty	10	.879
6	Behavior Loyalty	6	.820
7	Attitude Loyalty	6	.899

Data Collection And Sample Characteristics

Data was obtained from the employed persons using mobile phones of cellular mobile services in Coimbatore City, Tamil Nadu State, with the help of structured questionnaire. Purposive sampling method was used to collect the data from the customers. Pre-paid and postpaid subscribers of GSM (Global system for Mobile) services were included in the present study. A total of 125 questionnaires were completed in all aspects.

Table: 3 Respondent Demographics

S.NO	DIMENSION	CATEGORY	NUMBERS	PERCENTAGE
1	GENDER	Male	75	60 %
		Female	50	40 %
2	AGE	18-22	8	6.4
		23-27	40	32
		28-32	35	28
		33-37	28	22.4
		38 and above	14	11.2
3	OCCUPATION	Private	70	56%
		Public	30	24%
		Others	25	20%
4	TYPE OF SERVICE SUBSCRIBED	Prepaid	86	68.8 %
		Post paid	39	31.2 %
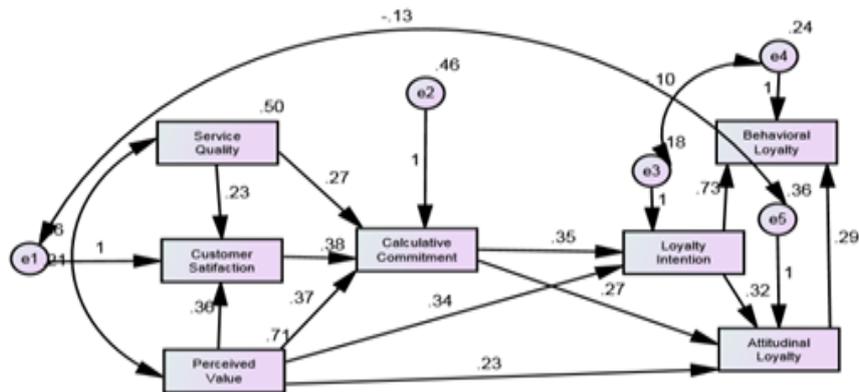
Table 4: Descriptive Statistics

Constructs	Mean	Std. Deviation	Range
Service Quality	3.4534	.70745	3.00
Perceived Value	3.4104	.84876	4.00
Customer Satisfaction	3.3714	.72372	3.16
Calculative Commitment	3.2880	.91952	3.57
Loyalty Intention	3.5651	.68789	3.50
Behavioral Loyalty	3.4546	.72644	3.00
Attitudinal Loyalty	3.5631	.80580	4.00

Table 5: Construct Correlations

	PV	SQ	CS	CC	LI	AL	BL
PV	1.000						
SQ	.352	1.000					
CS	.508	.379	1.000				
CC	.565	.441	.551	1.000			
LI	.684	.356	.473	.709	1.000		
AL	.593	.314	.185	.561	.615	1.000	
BL	.662	.346	.384	.668	.687	.694	1.000

Descriptive statistics and construct correlations Means, standard deviations, ranges, and correlation among latent variables are reported in Table 4 and table 5. After multiple-item scales were summed and averaged, these descriptive statistics were estimated. AMOS was used to calculate the correlations between latent variables.

Table 6: Goodness Of Fit For Structure Model

Result (Default model)
Minimum was achieved
Chi-square = 8.796
Degrees of freedom = 6
Probability level = .185

Goodness of fit statistics	Observed value
CMIN	8.796
DF	6
P	0.185
CMIN/DF	1.466
GFI	0.981
AGFI	0.909
CFI	0.994
PNFI	0.281
RMSEA	0.061

Reliability And Validity Of The Measures

The measurement model fit, reliability, and construct validity were assessed by the use of a confirmatory factor analysis (CFA). Seven common model-fit measures were used to validate the measurement model; chi-square/degree of freedom, goodness-of-fit index (GFI), adjusted goodness-of-fit index (AGFI), non-normed fit index (PNFI), comparative fit index (CFI), (PCFI) root mean square error of approximation (RMSEA). All of the model-fit indexes exceed their respective common acceptance levels suggested by the prior literature (Chau, 1997; Hair, Anderson, Tatham, & Black, 1998); i.e., the measurement model shows good fit with the data gathered (CMIN / DF = 1.466, GFI = 0.981, AGFI = 0.909, PNFI = 0.984, CFI = 0.994, RMSEA = 0.061). The reliability of measurement items was assessed by the internal consistency method. Cronbach's alpha is generally considered to provide a reasonable estimate of internal consistency. These values range from 0.634 to 0.899. The Cronbach's alpha value for each construct surpasses the recommended value of 0.60 or 0.70 (Hair et al., 1998; Nunnally, 1978).

The structural model was estimated with MLE (Maximum Likelihood Estimation) and the covariance matrix. As summarized in Table 6, all overall goodness of fit indexes exceed recommended cut-off values. Therefore, our research model exhibits quite good fit with the data gathered, as suggested by the inspected goodness-of-fit indexes exceeding or corresponding to their recommended values commonly suggested in the prior literature (Chau, 1997).

Table 7: Regression Weights: (Group Number 1 - Default Model)

Estimates (Group number 1 - Default model)

	Path		Estimate	S.E.	C.R.	P	Label
CS	<---	SQ	.233	.076	3.048	.002	
CS	<---	PV	.364	.068	5.389	***	
CC	<---	CS	.382	.102	3.753	***	
CC	<---	PV	.367	.086	4.286	***	
CC	<---	SQ	.270	.096	2.822	.005	
LI	<---	CC	.354	.046	7.756	***	
LI	<---	PV	.338	.049	6.878	***	
AL	<---	LI	.318	.119	2.674	.007	
AL	<---	PV	.225	.087	2.591	.010	
AL	<---	CC	.272	.082	3.318	***	
BL	<---	AL	.292	.065	4.527	***	
BL	<---	LI	.725	.103	7.035	***	

The results (table 7) regression weights confirm that all the hypothesized (H1, H2,H3, H4,H5, H6, H7,H8, H9, H10, H11 & H12) have significant and positive relationship. The regression value of the paths between service quality and customer satisfaction (0.233) supporting H1, service quality and calculative commitment (0.270) supporting H2, perceived value and customer satisfaction (.364***) supporting H3, perceived value to calculative commitment (.367***) supporting H4, perceived value and loyalty intention (0.338) supporting H5, perceived value and attitudinal loyalty (0.225) supporting H6, customer satisfaction and calculative commitment (.382***) supporting H7, calculative commitment and loyalty intention (.354***) supporting H8, calculative commitment and attitudinal loyalty (.272***) supporting H9, loyalty intention and attitudinal loyalty (0.318) supporting H10, loyalty intention and behavioral loyalty (.725***) supporting H11, attitudinal loyalty and behavior loyalty (.292***) supporting H12.

Table 8: Squared Multiple Correlations (R Square)

Squared Multiple Correlations: (Group number 1 - Default model)

Constructs	Estimate
CS	.304
CC	.448
LI	.620
AL	.447
BL	.543

IV. Findings and discussions

The explanatory power (R2) value of the predictor constructs range from 30 percent to 62 percent (Table 7). The path analysis service quality and perceived value have positive effects on customer satisfaction explaining 30.4% of its variance. Therefore H1, H3 are confirmed. Service quality, perceived value and customer satisfaction have positive effects on calculative commitment explaining 44.8% of its variance.

Therefore H2, H4, H7 are confirmed. Perceived value and Calculative commitment has positive effect on Loyalty Intention explaining 62% of its variance. Therefore H5, H8 was confirmed. Perceived value, Calculative commitment and Loyalty intention has positive effect on attitudinal loyalty explaining 44.7 of its variance. Therefore H6, H9, H10 was confirmed. Loyalty Intention and attitudinal loyalty has positive effect on Behavior Loyalty explaining 54.3%. Therefore H11, H12 was confirmed.

V. Limitations

The study does not consider other factors influencing loyalty such as network quality, consumer characteristics, corporate image, and perceived usefulness usage patterns. The present study relies on cross-sectional data to study customer loyalty. Longitudinal research is required to examine customer's long-term loyalty towards mobile network service providers. This research does not examine the interactions effects between corporate image, trust and commitment. Future researchers can test these interaction effects and study its impact on development of behavioral and attitudinal loyalty.

VI. Future Research Directions

Further research may incorporate the effect of variables like perceived usefulness, switching cost, and price perceptions on customer loyalty and examine more influences. This study develops and validates the measures of customer loyalty and its antecedents for cell phone users. Future studies could consider to what extent the measures proposed in this study are valid in different service industries like hotel industry, health care industry and automobile industry and modifications need to be made in the scale items across different samples and contexts.

References

[1]. Anvesha, PAbiodunAbolaji Joachim, Oyeniyi, Omotayo Joseph Osibanjo, OmotayoAdewale, "Determinants of Customer Loyalty and Recommendations to Others in the Nigerian Telecommunication Industry" Vol. 5 No. 3.
[2]. Amine, A. (1998), "Consumer's true brand loyalty: the central role of commitment", Journal of Strategic Marketing, Vol. 6 No. 4, pp. 305-19.
[3]. Ajzen, I. (1991). The theory of planned behavior. Organizational Behavior and Human Decision Processes, 50(2), 179–211.
[4]. Alter, S. (2008). Defining information systems as work systems: Implications for the IS field. European Journal of Information System, 17(5), 448–469.
[5]. Bansal, H.S., Irving, P.G. and Taylor, S.F. (2004) "A Three-component Model of Customer Commitment to Service Providers", Journal of the Academy of Marketing Science, Vol.32, No.3, pp. 234-250.
[6]. Bertot, J. C., Jaeger, P. T., & Grimes, J. M. (2010). Using ICTs to create a culture of transparency: E-government and social media as openness and anti-corruption tools for societies. Government Information Quarterly, 27(3), 264–271.
[7]. Bhattacherjee, A. (2001). Understanding information systems continuance: An expectation-confirmation model. MIS Quarterly, 25(3), 351–370.
[8]. Bina, M., & Giaglis, G. M. (2007). Perceived value and usage patterns of mobile data services: A cross-cultural study. Electronic Markets, 17(4), 241–252.
[9]. Blau, P. (1964). Exchange and power in social life. New York: Wiley.
[10]. Brislin, R. W. (1970). Back-translation for cross-culture research. Journal of CrossCultural Psychology, 1(3), 185–216.
[11]. C. Calvo-Porral et al. "Satisfaction and switching intention in mobile services: Comparing lock-in and free contracts in the Spanish market" Telematics and Informatics 34 (2017), PP. 717–729.
[12]. C.-C. Chang "Exploring mobile application customer loyalty: The moderating effect of use contexts" Telecommunications Policy 39 (2015), PP. 678–690.
[13]. Md. Ashaduzzaman, S. M. Sohel Ahmed, Md. Moniruzzaman Khan, (2011) , consumer Choice behavior towards mobile phone operators in Bangladesh, International Refereed Research Journal Vol.– II, Issue –4, Researchers world-Journal of Arts, Science & Commerce, E-ISSN 2229-4686, ISSN 2231-4172.
[14]. Chen, C. (2007) "Perceived Quality, Perceived Value, Satisfaction and Behavioral Intentions for Heritage Tourists", Proceedings of the 13th Asia Pacific Management Conference, Melbourne Australia, pp.1130-1136.
[15]. Covadonga Gijón a,b , Teresa Garín-Muñoz c , Teodosio Pérez-Amaral a,n , Rafael López-Zorzano (2013) "Satisfaction of individual mobile phone users in Spain". Telecommunications Policy 37, PP 940–954.
[16]. C. Wang "Antecedents and consequences of perceived value in Mobile Government continuance use: An empirical research in China" Computers in Human Behavior 34 (2014) PP. 140–147.
[17]. C. Wang "Antecedents and consequences of perceived value in Mobile Government continuance use: An empirical research in China" Computers in Human Behavior 34 (2014), PP. 140–147.
[18]. Cronin, J. J., Brady, M. K., & Hult, G. T. M. (2000). Assessing the effects of quality, value, and customer satisfaction on consumer behavioral intentions in service environments. Journal of Retailing, 76(2), 193–218.
[19]. D D.-H. Shin "Effect of the customer experience on satisfaction with smart phones: Assessing smart satisfaction index with partial least squares". Telecommunications Policy - 39 (2015) 627–641.
[20]. D.-H. Shin "What makes consumers use VoIP over mobile phones? Free riding or consumerization of new service" Telecommunications Policy, 36 (2012), PP 311–323.
[21]. Daniel Kipkirong Tarus and Nicholas Rabach "Determinants of customer loyalty in Kenya: does corporate image play a moderating role?" The TQM Journal Daniel Kipkirong Tarus and Nicholas Rabach. Vol. 25 No. 5, 2013 pp. 473-491.
[22]. Evanschitzky, H., Iyer, G.R., Plassmann, H., Niessing, J. and Meffert, H. (2006), "The relative strength of affective commitment in securing loyalty in service relationships", Journal of Business Research, Vol. 59, pp. 1207-
[23]. Gefen, D., & Straub, D. W. (2000). The relative importance of perceived ease of use in IS adoption: A study of e-commerce adoption. Journal of the Association for Information Systems, 1(1), 1–30

[24]. Heejin Lim, Richard Widdows and Jungkun Park "M-loyalty: winning strategies for mobile carriers" Journal of Consumer Marketing 23/4 (2006) PP. 208–218.

[25]. H.-L. Yang, S.-L. Lin "User continuance intention to use cloud storage service" Computers in Human Behavior, 52 (2015), PP. 219–232.

[26]. H. Yang et al. "User acceptance of wearable devices: An extended perspective of perceived value" Telematics and Informatics 33 (2016) PP.256–269.

[27]. Harsandaldeep Kaur, Harmeen Soch "Mediating roles of commitment and corporate image in the formation of customer loyalty". 23 November 2012, PP.33-51.

[28]. Ilias Santouridis and Panagiotis Trivellas " Investigating the impact of service quality and customer satisfaction on customer loyalty in mobile telephony in Greece" The TQM Journal, Vol. 22 No. 3, 2010 pp. 330-343.

[29]. J. Kim et al. "Antecedents of application service continuance: A synthesis of satisfaction and trust" Expert Systems with Applications 38 (2011), PP. 9530–9542.

[30]. James E. Richard, Victoria University of Wellington, New Zealand Annie Zhang, May 2012, Corporate image, loyalty, and commitment in the consumer travel industry, Journal of Marketing Management Vol. 28, Nos. 5–6,pp. 568–593.

[31]. L. Zhao et al "Assessing the effects of service quality and justice on customer satisfaction and the continuance intention of mobile value-added services: An empirical test of a multidimensional model" Decision Support Systems 52 (2012) PP. 645–656.

[32]. Luarna, P., & Lin, H. H. (2005). Toward an understanding of the behavioral intention to use mobile banking. Computers in Human Behavior, 21(6), 873–891

[33]. Michael Daniel Clemes and Xin Shu, Christopher Gan "Mobile communications: a comprehensive hierarchical modelling approach"- Asia Pacific Journal of Marketing and Logistics. Vol. 26 No. 1, 2013 pp. 114-146.

[34]. N. Mallat et al. "The impact of use context on mobile services acceptance: The case of mobile ticketing" Information & Management 46 (2009) PP. 190–195.

[35]. Oliver, R. L. (1980). A cognitive model of the antecedents and consequences of satisfaction decisions. Journal of Marketing Research, 17(4), 460–469.

[36]. Parasuraman, A., & Grewal, D. (2000). The impact of technology on the qualityvalue-loyalty chain: A research agenda. Journal of the Academy of Marketing Science, 28(1), 168–174.

[37]. Paramaporn Thaichon, Antonio Lobo and Ann Mitsis Fac " Achieving customer loyalty through service excellence in internet industry" International Journal of Quality and Service Sciences, Vol. 6 No. 4, 2014 pp. 274-289.

[38]. S. Nikou, H. Bouwman" Ubiquitous use of mobile social network services" Telematics and Informatics 31 (2014), PP. 422–433.

[39]. S K Chadha* and Deepa Kapoor, "Effect of Switching Cost, Service Quality and Customer Satisfaction on Customer Loyalty of Cellular Service Providers in Indian Market" The IUP Journal of Marketing Management Vol. VIII, No. 1, 2009.

[40]. Sun, Y., & Jeyaraj, A. (2013). Information technology adoption and continuance: A longitudinal study of individuals behavioral intentions. Information & Management, 50(7), 457–465.

[41]. Telecommunications in India, https:en.wikipedia.org/wiki/Telecommunications in India. March 2017.

[42]. TRAI (Telecom Regulatory authority Of India, Annual report (2015-16). www.trai.gov.in/

[43]. TRAI (2009), Annual Report 2008-09, Telecom Regulatory Authority of India, available at: www.trai.gov.in (accessed 25 May 2010).

[44]. Ying-Feng Kuo a,*, Chi-Ming Wu b , Wei-Jaw Deng "The relationships among service quality, perceived value, customer satisfaction, and post-purchase intention in mobile value-added services" Computers in Human Behavior 25, PP. 887–896.

[45]. W.-M. Hur et al. "The role of commitment on the customer benefits –loyalty relationship in mobile service industry" The Service Industries Journal Vol. 30, No. 14, December 2010, PP.2293–2309.

[46]. Wang, G. (2002), "Attitudinal correlates of brand commitment", Journal of Relationship Marketing, Vol. 1 No. 2, pp. 57-75.

[47]. Zeithaml, V. A. (1988). Consumer perceptions of price, quality, and value: A means-end model and synthesis of evidence. Journal of Marketing, 52(4), 2–22.